
 <p>US Army Corps of Engineers Pacific Ocean Division</p>	<p align="center">Lahaina, Maui, Groundwater Tracer Study Planning Assistance to States Project Management Plan</p>	 <p align="center">Honolulu District</p>
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1. **Purpose:** This Project Management Plan (PMP) provides a detailed plan for management and execution of the Lahaina, Maui, Groundwater Tracer Study conducted by the US Army Corps of Engineers (USACE), Honolulu District (POH) under the U.S. Army Corps of Engineers' Planning Assistance to States (PAS) Program. The plan includes a work scope, study schedule, budget and cost estimates, and a resource allocation plan. All plans developed in the PMP have been reviewed and concurred in by the Project Delivery Team (PDT). The PMP has been prepared in accordance with [Engineer Regulation 5-1-11, 17 August 2001, USACE Business Process](#).
2. **Authority:** [Section 22 of the Water Resources Development Act of 1974](#), as amended, provides authority for USACE to assist the states, local governments, and other non-Federal entities in the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources.
3. **Relationship to Cost Sharing Agreement:** This PMP is a supplementary document to the Cost Sharing Agreement (CSA), which provides the legal framework on the rules, responsibilities, and cost sharing to be mutually agreed upon by the non-Federal sponsor and USACE on the production and course of the study. The CSA specifically addresses the cost sharing requirements, method and timing of payment, and related matters. The CSA between POH and the State of Hawaii, Department of Health (DOH), the non-Federal sponsor, was executed on 17 November 2010.
4. **Project Location:** The study will cover the area southwest of the Lahaina Wastewater Reclamation Facility in Lahaina, Island of Maui, State of Hawaii out past the submerged groundwater seeps off the shore of Kahekili Beach Park as depicted in Figures 1 and 2.
5. **Project Scope.** The Lahaina Wastewater Reclamation Facility (LWRF or facility) disposes of wastewater effluent into injection wells located approximately 1900 feet from the shoreline between Black Rock and Honokowai Point, Lahaina, Hawaii. The scope of this project is to conduct a tracer study to confirm the locations of the emerging discharge of injected effluent into the coastal marine waters and determine a travel time from the facility's injection wells to coastal waters. More detailed information on study scope and methodology is available in the Cooperative Agreement between the USACE Engineer Research and Development Center (ERDC) and the University of Hawai'i at Mānoa (UH), "Lahaina Groundwater Tracer Study, Lahaina, Maui, Hawaii", W912HZ-11-2-0020, dated 26 April 2011.



Figure 1: Lahaina Groundwater Tracer Section 22 Study Location Map



Figure 2: Location Map of Submerged Groundwater Seeps, Kahekili Beach Park

5. Sponsor Expectations: By letter dated 8 September 2010, the sponsor, DOH, identified the need for the investigation. The study is considered:

- ☐ a routine request for assistance.
- ☒ important to meet an existing or recurring need.
- ☐ extremely important because of a critical need.

6. **Product Delivery Plan/Acquisition Strategy:** DOH proposed work-in-kind funded by the U.S. Environmental Protection Agency (EPA) as 100% match for this activity. EPA approved the use of funds in accordance with Section 2007 of the Water Resources Development Act of 2007 in a letter dated 10 August 2010. The acquisition strategy for this project is for DOH and POH to both access UH to conduct the study in two parts. Via the Cooperative Ecosystems Studies Unit (CESU) agreement administered by ERDC, POH tasked UH with the Phase I activities of background assessment, field reconnaissance, literature review and tracer design plan. Through State of Hawaii procurement processes, DOH tasked UH to conduct the Phase II activities of tracer study implementation and interpretation the findings and results. EPA, as a partner, is providing technical subject matter expertise and quality assurance/quality control of the study development and implementation. Table 1 provides a breakdown of the project delivery plan.

Because the acquisition strategy utilized the CESU Agreement via ERDC, no analysis of small business use was required. ERDC, as the Contracting Officer, handles all compliance issues related to the CESU agreement.

Table 1: Project Delivery Plan

Task	POH	ERDC	DOH	EPA	UH	Comment
Project Management	X		X			POH will manage Phase I; DOH will manage Phase II
Contract Management		X	X			ERDC will manage Phase I; DOH will manage Phase II
Phase I Activities					X	
Phase II Activities					X	
Final Report Compilation	X				X	
QC Review	X		X	X		EPA and DOH will be primary leads for QC review

7. **Schedule:** Table 2 provides a schedule of study implementation.

Table 2: Lahaina Tracer Study Project Schedule

Task	Start/Finish Date	Comments
CSA Execution	17 Nov 2010	
CESU Task Award to UH	1 Jan 2011 / 26 Apr 2011	
DOH Task Award to UH	1 Jan 2011 / 30 Jul 2011	
Phase I Field Reconnaissance	30 May 2011 / 30 Sep 2011	TIR Flight
Phase I Tracer Study Design and Workplan	1 May 2011 / 9 Aug 2011	
Phase I Background Assessments	20 Jun 2011 / 1 Jul 2011	Terrestrial & Marine

Phase II – Dye Injection and Monitoring	28 Jul 2011 / EST Jun 2012	First dye injected 28 July 2011; 2nd dye injection 11 Aug 2011. 1st dye first detected 24 Oct 2011. 2nd dye injection not detected as of 1 Jan 2011. It is expected that detectable concentrations of 1st dye will continue to be discharged well past 30 June 2012. UH will continue tracer sampling through June 2012.
Phase II – Nutrient/Geochemical and Radon/Radium Survey	19 Sep 2011 / 25 Sept 2011	Terrestrial & Marine
Phase II – Preliminary Analysis and Interpretations	EST 1 Apr 2012 / 30 Apr 2012	Dependent upon the date of peak dye-concentration detection. Establishment of the peak dye concentration is needed for average time of travel estimation. The best estimate of elapsed time between first detection to peak concentration is approximately four months
Draft Master Report	1 May 2012 / 31 May 2012	
Final Master Report	1 Jun 2012 / 30 Jun 2012	
Supplemental Tracer Report	EST 1 Jun 2012 / 30 Aug 2012	Dictated by obtaining a reasonable part of the breakthrough curve. A Supplemental Tracer Report will be submitted as an addendum within 60 days of the termination of dye sampling.
Project Closeout/After Action Review	30 Aug 2012	

8. Resource Allocation Plan: Table 3 provides a breakdown of cost allocations.

Table 3: Lahaina Tracer Study Cost Estimate

<u>TASK</u>	<u>ESTIMATED COST</u>	<u>POH FUNDED</u>	<u>DOH WORK IN-KIND</u>
Project Management	\$21,500	\$14,000	\$7,500
Finance/Accounting	\$5,000	\$5,000	---
USACE P2 Scheduling/Reporting	\$2,500	\$2,500	--
Inter-Island Travel	\$1000	\$500	\$500
Phase I Tasks	\$125,000	125,000	--

CESU Researcher	\$101,750	\$101,750	--
CESU Researcher DOH (17%)	\$ 17,298	\$17,298	--
ERDC Contract Oversight (5% of total CESU)	\$5,952	\$5,952	--
Phase II Tasks	\$140,000	--	\$140,000
Report Compilation	\$2,000	\$2,000	--
QC Review	\$3,000	\$1,000	\$2,000
TOTAL	\$300,000	\$150,000	\$150,000

9. Communication Strategy: The primary method of communication between POH, DOH, EPA and UH is via project delivery team (PDT) meetings and teleconference calls. UH will provide regular updates to POH, DOH, and EPA. As necessary, meetings with Maui County, as the primary stakeholder, will occur to provide updates and progress on the study. Based on the study progress, UH will recommend when information is appropriate to release to a larger audience. The PDT (POH, DOH, EPA and UH) will determine the best methods to release information to the larger public – e.g. press releases or notifications. If it is determined that an information meeting is appropriate, EPA and DOH will coordinate any associated outreach as public meetings are not incorporated into the study scope. In accordance with the CESU agreement, UH will determine when and which peer review journals would be appropriate for publication and will notify POH, DOH and EPA. Unless requested by UH, POH, DOH and EPA will not have any input on the publication process.

Interagency and internal communication and execution shall be consistent with the study priority. The PM will serve as primary point of contact with sponsor, however direct contact between PDT members and customer is acceptable as required. The PM will ensure the PMP is on the local area network for accessibility to the PDT and the USACE Pacific Ocean Division (POD), and will inform the customer of all changes requiring PDT approval via e-mail (or most efficient option). The PM will conduct PDT meetings, and other team meetings regularly throughout the duration of the study as required by study activities and issue resolution. The PM will conduct public, community, and local agency informational meetings as necessary. Public affairs considerations shall be part of every project. Project managers will seek public affairs guidance on media and communications issues and all media contacts and responses will be coordinated with the Public Affairs Office.

10. Change Management Plan: The PM will amend all changes to study scope, costs, and schedules of the PMP with concurrence of the PDT. The PM shall approve the schedule revisions if within established milestone thresholds. If the proposed schedule changes affect the Command Management Review compliance, the PM shall secure the endorsement by the Chief, Engineering and Construction for concurrence and the Deputy District Engineer for Programs and Project Management (DPM) for approval. Any project on the PRB shall require approval from the Deputy District Engineer for Programs and Project Management (DPM) and concurrence from the Chief, Engineering and Construction for milestone changes. Schedule changes will be noted in Appendix A.

11. Quality Management Plan: The documentation provided for this project shall be in compliance with Headquarters, USACE regulation and guidance on quality management objectives. Actions provided by the team shall include technical review of engineering, planning, and policy issues, adherence to all customer expectations as appropriate, to assure quality measures are provided in products. In A-E and professional service actions, consultants shall provide Quality Control Plans to assure similar levels of quality maintenance. The PM shall address the adherence to quality requirements in product review meetings and after action reports. For the purposes of this study, EPA will act as the technical subject matter expert to conduct the District Quality Control (DQC) of the products delivered.


12. Quality Objectives: The quality objectives for this PMP will be measured by the milestone dates as referenced in Table 2.

13. After Action Review (AAR): The purpose of an AAR is to learn from, improve upon, and document successes and deficiencies of studies and projects. The goal of an AAR is to improve study processes, products and customer satisfaction. The project manager will conduct an AAR upon completion of the feasibility phase. PDT members shall participate in the AAR.

Lahaina, Maui Groundwater Tracer Study
Project Management Plan
Planning Assistance to States

Statement of Agreement: *We, the undersigned, agree to follow the provisions of this PMP. Each activity will focus its efforts and influence to provide complete comprehensive, up-front planning and to meet the objectives of completing the study, design & construction for this project and for fulfilling the using agency's needs and to meet quality, safety and reliability of expectations, with minimum changes, within budget, and within schedule. Changes to the scope, schedule, costs, strategy, or Project Delivery Team members, included in this plan, must be coordinated with and approved by the undersigned or their designated representatives and fully documented.*

Project Manager:
Civil and Public Works Branch
PPMD (808) 438-6940


Cindy S. Barger

Date: 17 Jan 12

Sponsor:
State of Hawaii Department of Health
(808) 586-4258

/electronic signature/
Mr. Daniel Chang

Date: 11 Jan 2012

EPA
Groundwater Office (415) 972-3971

/electronic signature/
Mr. David Albright

Date: 5 Jan 2012

University of Hawaii at Manoa
Department of Geology & Geophysics
(808) 956-2200

/electronic signature/
Dr. Craig Glenn

Date: 5 Jan 2012

Program Analyst
PPMD
(808) 438-8864


Mr. Geoffrey Lee

Date: 17 Jan 12

ERDC
CESU Technical Coordinator
(601) 634-3717

/electronic signature/
Mr. Glenn Rhett

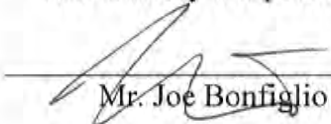
Date: 30 Dec 2012

Office of Counsel:
Legal Review (808) 438-8395

/electronic signature/
Ms. Lindsey Kasperowicz

Date: 3 Jan 2012

Public Affairs Office:
Public Affairs Official
(808) 438-8317


Mr. Joe Bonfiglio

Date: 31 JAN 2012

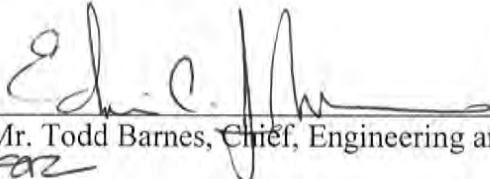
Small Business
Deputy (808) 438-8586

/Not Required/
Ms. Catherine Yoza

Date: 12 Jan 2012

Lahaina, Maui Groundwater Tracer Study
Project Management Plan
Planning Assistance to States


Concurred:



Mr. Todd Barnes, Chief, Engineering and Construction Division
TAR

1/30/12
Date

Approved:



Mr. Tony Paresa, Deputy District Engineer for Programs and
Project Management

1/31/12
Date

Appendix A

Slip Notes

[illegible]

From: [Chang, Daniel H](#)
To: [Barger, Cindy S POH](#)
Subject: RE: Lahaina Groundwater Tracer Study PMP - approval requested by 13 Jan 12 (UNCLASSIFIED)
Date: Wednesday, January 11, 2012 10:49:47 AM

Cindy:

I have reviewed the Lahaina Groundwater Tracer Study PMP and concur with its contents.

Daniel Chang
Safe Drinking Water Branch
Hawaii Department of Health

-----Original Message-----

From: Barger, Cindy S POH [<mailto:Cindy.S.Barger@usace.army.mil>]
Sent: Wednesday, January 11, 2012 10:37 AM
To: Chang, Daniel H
Subject: FW: Lahaina Groundwater Tracer Study PMP - approval requested by 13 Jan 12 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Dan - Here's the PMP. If you can give a quick look through and an email confirmation. This is essentially the cost share agreement scope of work in a different form with the updated schedule.

Thanks
Cindy

-----Original Message-----

From: Barger, Cindy S POH
Sent: Thursday, December 29, 2011 3:38 PM
To: Chang, Daniel H; 'Albright.David@epamail.epa.gov'; 'Craig R. Glenn'
Cc: 'Rumrill.Nancy@epamail.epa.gov'
Subject: Lahaina Groundwater Tracer Study PMP - approval requested by 13 Jan 12 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Folks

As a heads up, because the dye has taken longer than originally anticipate to be detected, we processed an extension to the UH tasking earlier this month. We have extended the study to end of Jun 2012. Depending on when the 2nd dye is detected, the report may be finished before this or we may need to extend again.

While processing this extension, I realized I forgot to complete some paperwork needed internally for the Corps - our Project Management Plan. This is a more critical product when the Corps is conducting all the work. However, I do need to check the box. It essentially outlines the scope of work in the original agreement with some additional information on change management, communication, etc. and acts as a living document for us to adjust as needed to address schedule or scope changes.

From: [David Albright](#)
To: [Barger, Cindy S POH](#)
Subject: Re: Lahaina Groundwater Tracer Study PMP - approval requested by 13 Jan 12 (UNCLASSIFIED)
Date: Thursday, January 05, 2012 4:43:52 AM
Attachments: [Lahaina WWTF PMP.doc](#)

Hi Cindy,

Consider this my concurrence on the attached PMP. Let me know if you need anything else.

Thanks again for all your support on this study.

Best regards,
David

David Albright
Manager, Ground Water Office

USEPA, Region IX	Phone: 415.972.3971
75 Hawthorne Street	Fax: 415.947.3549
Mail Code: WTR-9	Email: albright.david@epa.gov
San Francisco, CA 94105	

Lahaina Groundwater Tracer Study PMP - approval requested by 13 Jan 12 (UNCLASSIFIED)

Barger, Cindy S POH to: Chang, Daniel H, David Albright, Craig R. Glenn
12/29/2011 05:37 PM

Cc: Nancy Rumrill

Classification: UNCLASSIFIED
Caveats: NONE

Hi Folks

As a heads up, because the dye has taken longer than originally anticipate to be detected, we processed an extension to the UH tasking earlier this month. We have extended the study to end of Jun 2012. Depending on when the 2nd dye is detected, the report may be finished before this or we may need to extend again.

While processing this extension, I realized I forgot to complete some paperwork needed internally for the Corps - our Project Management Plan. This is a more critical product when the Corps is conducting all the work. However, I do need to check the box. It essentially outlines the scope of work in the original agreement with some additional information on change management, communication, etc. and acts as a living document for us to adjust as needed to address schedule or scope changes.

From: [Glenn, Craig](#) on behalf of [Craig R. Glenn](#)
To: [Barger, Cindy S POH](#)
Cc: [Chang, Daniel H](#); [David Albright](#); [Nancy Rumrill](#); [Bob Whittier](#); [Henrieta Dulaiova](#); [Aly I. El-Kadi](#)
Subject: Re: Lahaina Groundwater Tracer Study PMP - approval requested by 13 Jan 12 (UNCLASSIFIED)
Date: Thursday, January 05, 2012 10:37:33 AM
Attachments: [Lahaina WWTF PMP uhreviewed.doc](#)

Hi Cindy and others,

We went over Table 2 and made corrections to dates in the attached. We also modified Table 2 to reflect the reality of the amount of time it is taking to get the maximum dye concentration curves needed for proper groundwater timing assessments, while at the same time staying on track with reporting. Basically, the idea is to stay on track with deliverables of a primary "Master" Report, to be followed with a supplemental report within 60 days of the the termination of dye sampling. The dates reflect the current contract modifications.

We did not carefully comb the other parts of the document.

Please review and let me know if changes are needed, or not.

Thanks,
Craig

Craig R. Glenn, PhD
Professor of Geology & Geophysics | University of Hawaii
School of Ocean and Earth Science and Technology
1680 East-West Rd. POST Bldg. 701 | Honolulu, HI 96822
glenn@soest.hawaii.edu | Office: 808-956-2200 | Cell: 808-394-5155
www.soest.hawaii.edu/GG/FACULTY/glenn

On Dec 29, 2011, at 3:37 PM, Barger, Cindy S POH wrote:

- > Classification: UNCLASSIFIED
- > Caveats: NONE
- >
- > Hi Folks
- >
- > As a heads up, because the dye has taken longer than originally anticipate to be detected, we processed an extension to the UH tasking earlier this month. We have extended the study to end of Jun 2012. Depending on when the 2nd dye is detected, the report may be finished before this or we may need to extend again.
- >
- > While processing this extension, I realized I forgot to complete some paperwork needed internally for the Corps - our Project Management Plan. This is a more critical product when the Corps is conducting all the work. However, I do need to check the box. It essentially outlines the scope of work in the original agreement with some additional information on change management, communication, etc. and acts as a living document for us to adjust as needed to address schedule or scope changes.
- >
- > Craig - Could you please check Table 2 - the schedule? I adjusted it to what I think is right but want to make sure.
- >
- > All - Could you all please review this and provide me either comments or an email concurrence? E-mail concurrence is acceptable as "signature" of the document.

From: [Rhett, Glenn G ERDC-EL-MS](#)
To: [Barger, Cindy S POH](#)
Subject: RE: Lahaina Groundwater Tracer Study PMP - please review and approve. (UNCLASSIFIED)
Date: Friday, December 30, 2011 6:40:12 AM

Cindy ... The PMP looks good to me. Do I need to sign off somehow? Thx, Glenn

-----Original Message-----

From: Barger, Cindy S POH
Sent: Thursday, December 29, 2011 7:51 PM
To: Rhett, Glenn G ERDC-EL-MS
Subject: Lahaina Groundwater Tracer Study PMP - please review and approve. (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Hi Glenn - When doing the extension last month on this, I forgot that I hadn't done a PMP. Since the work is mainly done by UH with EPA being the SME, it skipped my mind.

Anyhoo - to clean up paperwork and "check the box" attached is the PMP. Could you please approve for ERDC?

If you could review and provide comments and/or email concurrence by 13 Jan 12, that would be great!

Thanks
Cindy

Cindy S. Barger
Watershed Program Manager
Civil and Public Works Branch
US Army Corps of Engineers, Honolulu District
CEPOH-PP-C, Rm 307, Bldg 230
Ft. Shafter, HI 96858
tel: 808-438-6940
bb: 808-220-6176

Classification: UNCLASSIFIED

Caveats: NONE

From: [Kasperowicz, Lindsey POH](#)
To: [Barger, Cindy S POH](#)
Subject: RE: Lahaina Groundwater Tracer Study PMP - please review and approve. (UNCLASSIFIED)
Date: Tuesday, January 03, 2012 8:18:32 AM
Attachments: [Lahaina WWTF PMP_LKrev.docx](#)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Cindy,

Concur. The attached doc has a few minor tech edits in it in tracked changes.

Thanks,

Lindsey Kasperowicz
Assistant District Counsel
808.438.8395

ATTORNEY CLIENT PRIVILEGED COMMUNICATION - ATTORNEY WORK PRODUCT - DO NOT RELEASE
UNDER FOIA - DO NOT COPY - DO NOT FORWARD

-----Original Message-----

From: Barger, Cindy S POH
Sent: Thursday, December 29, 2011 3:48 PM
To: Yoza, Catherine L POH; Bonfiglio, Joseph POH; Kasperowicz, Lindsey POH; Lee, Geoffrey K POH
Subject: Lahaina Groundwater Tracer Study PMP - please review and approve. (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Folks

Through ERDC and the Cooperative Ecological Studies Unit (CESU) agreement with UH, we issues a tasking to UH to conduct a study for us under the Planning Assistance to the States. Because ERDC is doing the contracting on this and EPA and DOH are acting as subject matter experts, the only inhouse work is done by me and PP-PC. As such, I forgot to write up a PMP until this month when processing an extension to the UH study through ERDC.

Attached is the PMP.

Cathy - Because this is via an MOA with the University and ERDC is acting as 'contract officer' there is no small business assessment.

Joe - When the study is completed, DOH and EPA may do a press release of some sort. I'll make sure we include you as a reviewer and in the release process.

If you could review and provide comments and/or email concurrence by 13 Jan 12, that would be great!

Thanks
Cindy

Cindy S. Barger
Watershed Program Manager
Civil and Public Works Branch

From: [Yoza, Catherine L POH](#)
To: [Barger, Cindy S POH](#)
Subject: FW: Lahaina PMP - Please send me your email concurrences by 13 jan 12 (UNCLASSIFIED)
Date: Thursday, January 12, 2012 9:45:09 AM
Attachments: [Lahaina WWTF PMP.docx](#)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Cindy,

I have noted that my signature is "Not Required" and dated this PMP. This project will be done as a research and development project, and "awarded" to a contractor on a cooperative agreement. I called Glenn Rhett, who put me in contact with Deanda Sontag, who explained the process to me. They have a small business specialist who follows these projects on that end, and POH small business is not involved.

Mahalo,

Catherine L. Yoza
Deputy for Small Business
USACE Honolulu District
Bldg 230, Ft. Shafter, HI 96858
Phone: (808)438-8586 FAX: (808)438-8351
Catherine.L.Yoza@USACE.Army.Mil

-----Original Message-----

From: Barger, Cindy S POH
Sent: Wednesday, January 11, 2012 4:07 PM
To: Bonfiglio, Joseph POH; Yoza, Catherine L POH
Subject: Lahaina PMP - Please send me your email concurrences by 13 jan 12 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Folks

I'm only missing you on the Lahaina PMP concurrence. Please send your email concurrence to me by Friday so I can finalize the PMP.

Thanks!
Cindy

Cindy S. Barger
Watershed Program Manager
Civil and Public Works Branch
US Army Corps of Engineers, Honolulu District CEPOH-PP-C, Rm 307, Bldg 230 Ft. Shafter, HI 96858
tel: 808-438-6940
bb: 808-220-6176

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED